Response under 37 C.F.R. 1.116
- Expedited Examining Procedure -
Examining Group 2615

MAIL STOP AF
81229PCW

Customer No. 01333

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Shen Wang, et al

DETECTING HOPPING PIXEL DEFECTS IN CCD IMAGE SENSORS

Serial No. 09/652,316

Filed 31 August 2000

Group Art Unit: 2615

Examiner: Jelinek, Brian J.

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Lois A. Massar

Jan. 19, 2005
Date

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

DECLARATION UNDER 37 CFR 1.132

Shen Wang declares that:

1. he is a co-inventor of the subject US Patent Application;

2. that he performed experimental tests on hopping pixels as described and claimed in the subject patent application;

3. that Fig. 1 shows a hopping pixel whose signal varies with time. This pixel has two distinct signal levels. One level is about 32.5 digital counts and the other is about 66 digital counts. With time, the pixel mainly hops between these two levels. If the background level for all remaining pixels is close to 32 counts, then this pixel hops positively (hopping level above the background) and more actively (staying more time in the hopping level than the background level).

4. On the other hand, if the background level for all remaining pixels is close to 66 counts, then this hopping pixel hops negatively (hopping level below the background) and less actively (staying less time in the hopping level than the background level). The histogram of Fig. 1 is shown in Fig. 2. There are two distinct signal peaks for this hopping pixel. The areas under each peak are the

times for the pixel to stay in that signal level. The difference between these two peak signals is the hopping magnitude. Both the hopping magnitude and hopping frequency are affected by the temperature. Usually they both increase with the increase of the temperature. This can be used to reduce the test time and increase test accuracy.

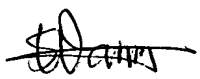
5. A hopping pixel is not a noisy pixel. Typically, the hopping magnitude of a hopping pixel is much greater than the noise range of a noisy pixel.

6. Fig. 3 shows a typical noisy pixel whose signal varies almost in all levels over time. There are no distinct levels besides the background level. Fig. 4 illustrates that there is only one signal peak, which is the background level. In addition, the noise level is usually smaller than the hopping magnitude.

7. Depending on the nature of the noise source, the noise levels are not necessarily depending on the temperature.

He further declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully Submitted,



Shen Wang